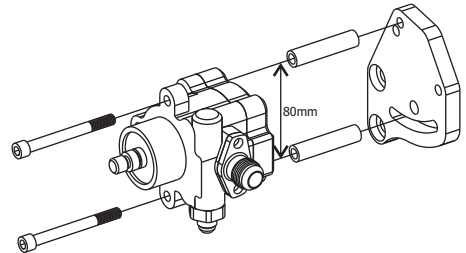


# Cast Iron Pump Tech

It is very important to read the instructions provided with the pump before installation.

The cast iron pump has a **maximum pump speed of 5,500 rpms**. Exceeding this speed will cause damage to the pump. To calculate pump speed, Divide your crank pulley diameter by the power steering pump pulley diameter and multiply that number by your maximum engine rpms. (Example:  $4.5''cp \div 6''psp = 0.75 \times 7,200 = 5,400$  rpm pump speed.)

Each pump is packaged with 2 spacers, .50"OD x 2.212" long, that will fill the space between the pump ears and the mounting bracket. Use the bolts furnished with your mounting bracket kit to attach the pump as shown in Drawing 1. Depending on the diameter of the pulley, you may need to install pump mounting bolts before you attach your pulley.



## Cast Iron Pressure Relief Valve Tech:

The pressure relief valve inside the pump is designed in such a manner as to give the steering system protection by sacrificing the relief valve, instead of blowing up the pump and/or seals throughout your steering system. If you put your steering system in a bind or at full lock, the pressure will increase until the resistance is removed or reaches the preset 1450psi pressure relief. When the pump reaches pressure relief it does not send the fluid back to the tank, it recirculates the fluid inside the pump and in less than one minute the fluid will overheat and can cause permanent damage to the pump.

There are several things that cause this to happen that are all covered in the instructions packaged with each pump:

1) Using -10 hose that is not rated to 28 INCHES/HG of vacuum. By using soft wall hoses on the intake side, they can suck shut starving the pump for fluid. This will also pulsate the pressure relief valve and break the spring inside. See Photo 1

2) Do not exceed the 5,500rpm pump speed. The -10 hose will not allow a enough fluid into the pump at any speed above that. This will cavitate and/or aerate the fluid causing damage to the camring assembly. See Photo 2.

The best way to tell if you are having a cavitation problem is to look at the flow valve. If it is missing the plating off the end, the pressure relief valve has been hammering on it. If this has happened the camring could look like the one in Photo 2. It is advised to then send the pump to KRC for repair.

Suggestions to JB Weld or TIG weld the end cap on the pressure relief valve is NOT recommend because it is pressed fit and designed to pop out to save the pump. Locking it will destroy the camring as in Photo 3. **A new pressure relief valve has a .026" to .028" gap between the main cap and body.** See Photo 3. Changing the gap will also change the preload on the internal spring causing it to fail. The only way the cap will come out of the pressure relief valve, is if at high rpms you shut off the intake side of the pump and the amount of suction the pump has at that time will actually suck the end cap out of the body. **This can only happen if you use the wrong size or type of intake hose or spin the pump to fast.** If the gap of your pressure relief valve is great than .026" to .028", then you must replace the pressure relief valve, Part Number 51450000.

Photo 2

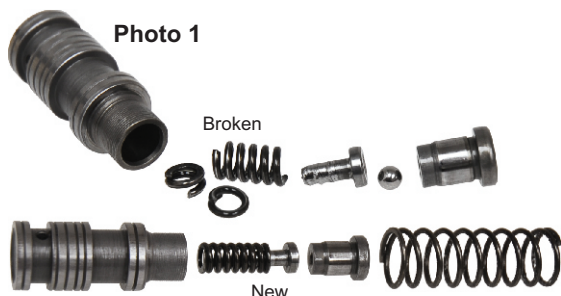


Photo 1

Photo 3

